Determining optimal lot size problem with rework and multiple deliveries using algebraic approach

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Abstract

This paper presents an algebraic approach for determining optimal lot size for economic production quantity (EPQ) model with rework and multiple deliveries. Conventional methods for solving production lot size are by using differential calculus on the long-run average production-inventory-delivery cost function with the need to prove optimality first. This paper shows that optimal lot size and its related costs for the aforementioned EPQ model can be derived without derivatives. As a result, it enables students and/or practitioners who with little knowledge of calculus to understand and handle with ease the realistic EPQ systems.

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